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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,275	12/02/2003	Haruki Ito	9319S-000589	3383
27572	7590	05/31/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			PHAM, THANHHA S	
P.O. BOX 828			ART UNIT	PAPER NUMBER
BLOOMFIELD HILLS, MI 48303			2813	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/726,275	Applicant(s) ITO, HARUKI	
	Examiner Thanhha Pham	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 7-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/02/03, 4/15/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to Applicant's Response to Restriction Requirement dated 04/05/2005.

Election/Restrictions

1. Claims 7-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 04/05/2005.

2. Applicant's election with traverse of claims 1-6 in the reply filed on 04/05/2005 is acknowledged. The traversal is on the ground(s) that all groups of claims are related to each other that an undue burden would not be placed upon the Examiner to maintaining all groups in a single application. This is not found persuasive because the two groups of inventions, the method group I of claims 1-6 and the device group II of claims 7-12, are distinct with reasons given in Office Action dated 03/08/2005 and acquired a separate status of art as shown by their different classification. There is a serious burden for Examiner to examine all of the groups of inventions. The requirement is still deemed proper and is therefore made FINAL.

Oath/Declaration

3. Oath/Declaration filed on 04/12/2004 has been considered.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first conductive layer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

► With respect to claim 1,

the phrase “patterning the conductive layers on the electrodes and the layer of the resin in accordance with a predetermined pattern of the protrusions; and removing the layer of the resin located between the conductive layers by the use of the patterned conductive layers as masks, so as to form the protrusions” renders the claim indefinite. It is not clear how the conductive layers can be patterned when a conductive layer has not been formed. It is not clear where the conductive layers would be formed before patterning the conductive layer. It is not clear how to remove the layer of resin located between the conductive layers while the conductive layer covers the top surface of the resin (see claim 1 lines 3-4 for details).

► With respect to claim 5, it is not clear how the conductive layers including the first conductive layers and the second conductive layers **on** the electrodes and **the layer of the resin** (claim 1) can be formed by **forming the first conductive layers** covering the electrodes **before the layer of the resin is formed**.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 5, as being best understood, are rejected under 35

U.S.C. 102(b) as being anticipated by Inoue Kazuo [JP 0227237].

► With respect to claim 1, Inoue Kazuo (fig. 2 and the abstract) discloses a method for manufacturing a semiconductor device including electrodes (bottom portion 2), a plurality of protrusions (4) which protrude higher than the electrodes and which are made of a resin in a predetermined pattern, and conductive layers (5) which are electrically connected to the electrodes and which cover top surfaces of the protrusions, the method comprising the steps of:

applying a layer of the resin (4) to the semiconductor device (1) except for the electrodes (2);

forming the conductive layers (5) on the semiconductor device (1), wherein the conductive layers (5) are electrically connected to the electrodes (2) and cover top surfaces of the protrusions (4).

► With respect to claim 5***, Inoue Kazuo discloses forming first conductive layers (top portion of layer 2) covering the electrodes (bottom portion 2) before the layer of the resin is formed; and forming second conductive layers (5) which are connected to the first conductive layers and which cover a top surface of the layer of the resin (4).

****Notice: this rejection based on the broad scope of the claim wherein the first conductive layers and the electrodes are made by the same material.*

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 3-4, as being best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue Kazuo [JP 02272737] in view of Wanatabe [US 6,458,682].**

Inoue Kazuo substantially discloses the claimed method except teaching forming the conductive layers by sputtering or plating.

However, sputtering and plating are known technique for forming the conductive layers. See Wanatabe (col. 3-4) shows forming the conductive layers (112 & 116) by sputtering and plating.

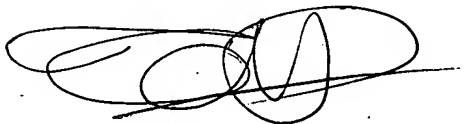
Therefore, at the time of invention, it would have been obvious for those skilled in the art, in view of Wanatabe, to use sputtering or plating as known techniques for forming the conductive layers in the process of Inoue Kazuo to provide electrical connection to the electrodes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhha Pham whose telephone number is (571) 272-1696. The examiner can normally be reached on Monday and Thursday 9:00AM - 9:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application-Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thanhha Pham
Patent Examiner
Patent Examining Group 2800